S01 Series, Molded Plastic Cell Module

Overview

KEMET S01 Series Supercapacitors are bank modules in which the cells are encased in a plastic holder.

Applications

Typical applications include wind turbine pitch control, starting systems, automotive subsystems, backup power/UPS, ride through/power conditioning, and renewable energy systems.

Benefits

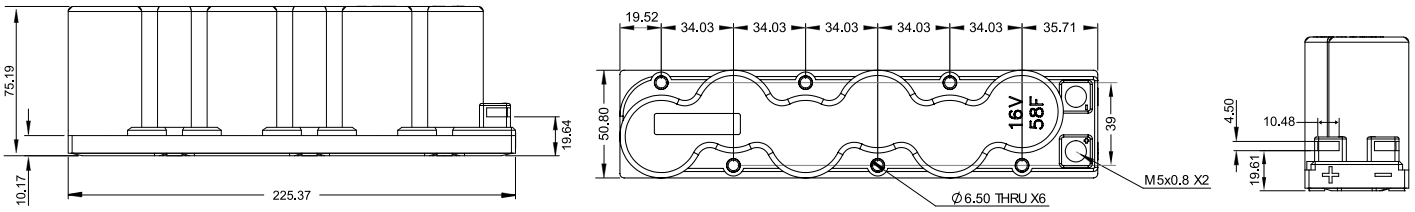
- 16 – 80 V working voltage
- Individually balanced cells
- IP–54 rated
- Threaded, protected terminals
- Operating temperature range of -40˚C to +65˚C
- Optional voltage and over temperature signal
- Cycle life > 500,000 cycles
- RoHS Compliant
- Made in USA

Part Number System

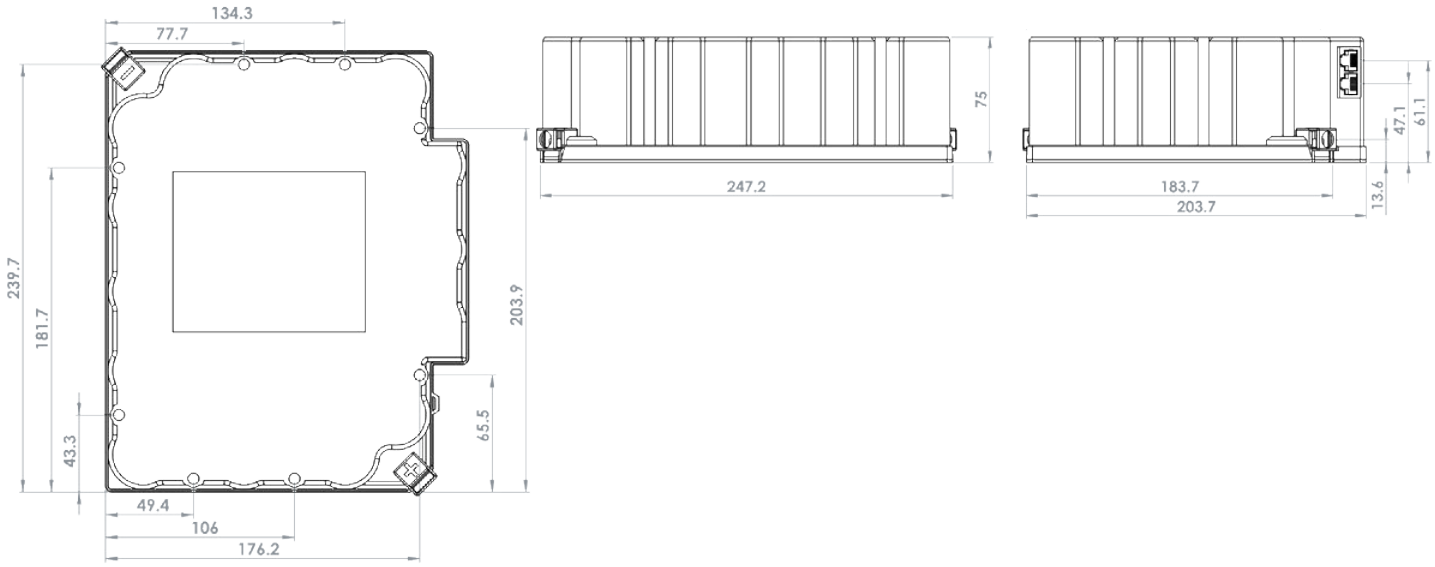
S01	P	M	5805	K	16	A	Uxxx
Series	Configuration Code Balancing	Configuration Code Capacitor Type	Capacitance Code (µF)	Capacitance Tolerance	Rated Voltage (VDC)	Termination Code	C-Spec
Supercapacitor, Bank Module, Molded Plastic Holder	P = Passive without clamping	M = Snap-in, multi-pin style	First three digits represent significant figures. Fourth digit specifies number of zeros.	K = ±10% R = -0%	016 = 16 V 080 = 80 V	A = The first mechanical configuration of a particular part number	Blank = No monitor U808 = Digital Overvoltage and analog over temperature monitor U809 = Digital Overvoltage and digital over temperature monitor U810 = Overvoltage and Overtemperature monitor through CAN Bus

Dimensions – Millimeters

S01PM5805K016A



S01PM1205R080A
S01PM1205R080AU809



Part Number	L		W		H	
	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
S01PM5805K016A	225.37	+/-1.0	50.8	+/-1.0	75.19	+/-1.0
S01PM1205R080A	238	+/-1.0	247	+/-1.0	74	+/-1.0
S01PM1205R080AU809	238	+/-1.0	247	+/-1.0	74	+/-1.0

Performance Characteristics

Item	Performance Characteristics
Rated Voltage	16 – 81 VDC
Surge Voltage	17 – 85 VDC
Isolation Voltage/High Potential	2,500 V
Capacitance Range	12 – 58 F
Capacitance Tolerance	±10%, -0%
Temperature Range	-40°C to +65°C
Storage Temperature Range	-40°C to +70°C
Temperature Characteristics	Capacitance Change: Within ±5% of initial specified value
	Internal Resistance (ESR): Within 100% of initial specified value
Life, DC	10 years, rated voltage, 25°C
	Δ C < 30% decrease, ESR < 100% increase
Life, Endurance	1,000 hours, rated voltage, 65°C
	Δ C < 30% decrease, ESR < 100% increase
Life, Shelf	1,000 hours, no voltage, 70°C
	Δ C < 20% decrease, ESR < 100% increase
Life, Cycle	> 500,000 cycles, rated to half rated voltage, 25°C
	Δ C < 30% decrease, ESR < 100% increase
Maximum Number in Series	40 (750 V)
Standards Compliance	RoHS, UL810a

Approvals

Series / Partnumber	Test Type	Test Standard	Date completed (or estimated)
S01PM5805K016A	Vibration	IEC 60068-2-6	January 2011
	Mechanical shock	IEC 60068-2-27	
	Underwriters Laboratory	UL810A	March 2011
	SAE Safety And Abuse	SAE J2464	pending Q1 2014
S01PM1205R080A S01PM1205R080AU809 S02AT5006R016AU808 S02AT1656R048AU808	pending		pending Q1 2014

Environmental Compliance

All KEMET supercapacitors are RoHS Compliant.

RoHS Compliant

Table 1 – Ratings & Part Number Reference

Part Number	S01PM5805K016A	S01PM1205R080A[1]	S01PM1205R080AU809[1]
Parameter			
Capacitance (F)	58	11.6	11.6
Capacitance Tolerance	±10%	-0%	-0%
Rated Voltage (V)	16	81	81
Surge Voltage (V)	17	85	85
Impedance [AC 1 kHz] (mΩ)	≤15	≤80	≤80
ESR [DC] (mΩ)	≤23	≤90	≤90
Leakage Current [72 h] (mA)	<25	125	125
Continuous Current Rating (A)	19	10	10
Maximum Peak Current 1 s (A)	200	200	200
Short Circuit Peak Current (A)	1,000	700	700
Cell Management	Passive	Passive	Passive
Overvoltage & Over Temperature Monitor	No	No	Yes
Energy/Power			
Maximum Stored Energy (Wh)	2.1	10.6	10.6
Energy Density (Wh/kg)	2.8	2.7	2.7
Energy Density (Wh/L)	3.6	3.5	3.5
Power Density (kW/kg)	5.8	6.3	6.3
Power Density (kW/L)	7.4	2.3	2.3
Maximum Power (kW/kg)	1.8	3	3
Physical			
Configuration Code	PM	PM	PM
L x W x H (mm)	225 x 51 x 76	238 x 247 x 74	238 x 247 x 74
Weight (kg)	0.76	3	3
Volume (ml)	594	3900	3900

[1]*Preliminary (See Prototype Sample Disclaimer)*

Mounting

Specific users guide with mounting instructions ship with module.

Packaging Quantities

Part Number	Capacitance (F)	Rated Voltage	Package Type	Package Quantity	Box Weight	Box Length	Box Width	Box Height
S01PM5805K016A	58	16	Box	1	2 lbs (0.9 kgs)	10.0" (254 mm)	6.0" (153 mm)	3.5" (89 mm)
S01PM1205R080A	12	80	Carton	1	7 lbs (3.2 kgs)	11.0" (279 mm)	8.5" (216 mm)	3.5" (89 mm)
S01PM1205R080AU809	12	80	Carton	1	7 lbs (3.2 kgs)	11.0" (279 mm)	8.5" (216 mm)	3.5" (89 mm)

Standard Marking

- KEMET logo
- Rated voltage
- Rated capacitance
- Terminal markings

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